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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,298	03/27/2004	Stephen W. Day	7751-C	9305

7590 11/29/2006  
Alan F. Meckstroth  
JACOX, MECKSTROTH & JENKINS  
Suite 2  
2310 Far Hills Building  
Dayton, OH 45419-1575

EXAMINER
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VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/810,298

Applicant(s)

DAY ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18, 19, 22-34 and 36-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18, 19 and 22-34 is/are allowed.
- 6) ☒ Claim(s) 36-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Art Unit: 1771

1. Rejections of claims 36-40 based on WO 200147706 are withdrawn. However, rejections of claims 41-53 are maintained.
2. The art rejections based on Tunis, III et al (US 5,904,972) are maintained.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 36-50 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Tunis, III et al (US 5,904,972). Tunis teaches a fiber reinforced core panel comprising an elongated untitized strip including a series of longitudinal arranged foam blocks 12, a reinforcing members 24 separating adjacent blocks, a first layer of continuous fibrous rovings 22 with each of the rovings helically surrounding the strip and extending continuously along the entire length of the strip (figure 2, column 7, lines 60-65). Tunis teaches a second layer of continuous fibrous rovings with each of the rovings helically surrounding the strip and extending continuously along the entire length of the strip (column 8, lines 5-17). Tunis teaches the fibers running in multiple directions to carry stresses running in different directions such as biaxial, triaxial. Likewise, Tunis teaches that the rovings in the second layer extending helically in an opposite direction and crossing the rovings in the first layer. The fibers located between the cores comprise mats or fibrous rovings (column 7, lines 55-67). The rovings are disposed adjacent corner of the strip (figure 15). The fibers

surround the sides of the cores and terminate at the top and the bottom and extend over the core surfaces (column 8, lines 5-10). The fibers located within the regions between each core read on Applicants' facer sheets as recited in claim 46. Since claims 47 and 48 are completely silent as to a spacer strip not covered with any fiber materials, the subject matter of these claims do not exclude the composite structure of Tunis. Figures 16B shows an arrangement of the cores used in a composite structure wherein each of three foam blocks 132 stacked in a vertical direction is treated as an elongated strip. Alternatively, each of six foam blocks aligned in the horizontal direction is treated as an elongated strip. The resin can be a thermoplastic resin or a thermosetting resin (column 5, lines 9-12). The resin flows from the microgrooves of the core surface to the fiber material (column 5, lines 13-19). Impregnation results from resin infusion originating at the core surface and migration outwardly to the exterior of the part (column 5, lines 13-16). Likewise, the resin extends through the outer surface of the fiber material as well. Accordingly, Tunis anticipates the claimed subject matter.

5. Claims 41-50, and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 200147706. Day et al (US 6,740,381) will be relied on as an equivalent form of WO 200147706 for convenience. Day teaches a fiber reinforced core panel 190 having a length greater than a width comprising a series of adjacent blocks 178 of low density cellular material and arranged to form an elongated strip, a first layer 176 of fibrous rovings continuously and helically surrounding the strip along the length thereof, a second layer 177 of fibrous rovings continuously and helically surrounding

the first layer on the strip along the length thereof. The rovings of the second layer extend helically in an opposite direction and crossing the rovings in the first layer (figures 13 and 14). Day teaches that the reinforcing member 180 applied to all faces of the foam strip (column 18, lines 58-60). Likewise, the blocks are separated by reinforcing member 180 which extend between adjacent blocks and between the layers. Day teaches a foam strip further comprising a reinforcing member 174 of fibrous rovings extending helically around the strip located above the planar web 180 as shown in figure 12. The helically extending rovings extend over the core surfaces (column 20, lines 50-60). The rovings 113 as shown in figure 8 reads on Applicants' rovings extending adjacent the core surfaces and parallel to the strips and having a depth into the foam blocks greater than their width. Figure 1 shows that each of strips 33 having opposite faces attached to corresponding facer 34 extending between the core surfaces of the core panel. The middle strip as shown in figure 14 reads on Applicants' spacer strip. Day teaches the reinforcing rovings and skin being impregnated with liquid resins which are subsequently fused together through the application of heat and pressure (column 23, lines 10-30). Likewise, the thermoset resin extending through the fibrous reinforcing members and an inner portion of at least one of skins and a thermoplastic resin extending through an outer portion of the skin. Accordingly, Day anticipates the claimed subject matter.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tunis, III et al (US 5,904,972) in view of Landi et al (US 5,039,567). Tunis does not teach a fiber reinforced core panel comprising an elongated strip having a portion of reduced thickness. Landi, however, teaches a sandwich structural panel for use in boat hull structure comprising a core made from a plurality of elongated serpentine strips of expanded thermoplastic material bonded together (figures 1 and 7, and column 4, lines 64-66). Likewise, the serpentine strips have portions of reduced thickness. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam strips having a serpentine configuration motivated by the desire to provide the panel having high tear and tensile strength and highly resilient with optimal compression load and shock absorption characteristics (see Landi, column 3, lines 19-22).
8. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 200147706 in view of Landi et al (US 5,039,567). Day does not teach a fiber reinforced core panel comprising a plurality of elongated serpentine strips. Landi, however, teaches a sandwich structural panel for use in boat hull structure comprising a core made from a plurality of elongated serpentine strips of expanded thermoplastic material bonded together (figures 1 and 7, and column 4, lines 64-66). Likewise, the serpentine strips have portions of reduced thickness. Therefore, it

would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam strips having a serpentine configuration motivated by the desire to provide the panel having high tear and tensile strength and highly resilient with optimal compression load and shock absorption characteristics (see Landi, column 3, lines 19-22).

***Terminal Disclaimer***

9. The terminal disclaimer filed on 09/14/2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,740,381 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Allowable Subject Matter***

10. Claims 18, 19, and 22-34 are allowed. No prior art was found to teach or fairly suggest a fiber reinforced core panel having a structure as recited in such the claims.

***Response to Arguments***

11. The art rejections based on Tunis have been maintained for the following reasons. Applicants argue that Tunis fails to teach an elongated strip or strips each including a series of longitudinal arranged blocks with continuous fibrous rovings helically surrounding the strip along its entire length to form a unitized core panel. The examiner respectfully disagrees. It is noted that claims 36, 46-49, 51 and 53 do not require each strip including a series of *longitudinal arranged* blocks and claim 50 itself only requires a series of connected blocks. The examiner directs Applicants'

Art Unit: 1771

attention to figure 16B of Tunis. Each of three foam blocks 132 stacked in a vertical direction is treated as an elongated strip. Alternatively, each of six foam blocks aligned in the horizontal direction is treated as an elongated strip. A detailed analysis has been provided to show that why it is believed that Tunis anticipates the claimed subject matter. Those arguments are incorporated by the reference.

12. The limitations of claims 36-40 have been fully supported by Day '381 and its December 27, 2000 filing date (see figures 16 and 17), Day '381 is not prior art. However, rejections of other claims based on Day '381 are maintained even in view of the terminal disclaimer filed on 09/14/2006. The subject matter described in claims 41-53 are directed to new parts which have an effective filing date of March 28, 2003. Day '381 or its corresponding PCT application is thus a prior art under 102 (b) and the terminal disclaimer is ineffective to overcome the 102(b) rejections.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory



Art Unit: 1771

period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HV

*Hai Vo*  
**HAIVO**  
**PRIMARY EXAMINER**